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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,805	12/07/2001	Hiromasa Shimizu	HITA.0131	7667

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EXAMINER

SEFER, AHMED N

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/004,805	Applicant(s) SHIMIZU ET AL.	
	Examiner A. Sefer	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on October 31, 2003 has been entered. Claims 2-5 have been cancelled and new claims 6-12 have been added.

Claim Objections

2. Claim 9 is objected to because it includes a reference character which is not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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The limitation “wherein in the absence of the external force, each of the second spacers is spaced from the stacked structure formed on the second substrate to accommodate the liquid crystal therebetween, and each of the first spacers directly contacts with the stacked structure formed on the second substrate” is not disclosed fully in the specification to enable one skilled in the art to make and/or use the invention. Without this information it would take undue experimentation to make and use the claimed invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that each of said second spacers is spaced from the stacked structure to accommodate the said liquid crystal layer and each of said first spacers directly contacts with said stacked structure in the absence of an external force. However, the portions of said stacked structure contacting said second spacers being thicker than the portions of said stacked structure corresponding to said second spacers with the liquid crystal layer interposed therebetween recited in claim 7 is not well understood.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 6, 8, 9 and 12 as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugata et al. (hereinafter "Sugata") USPN 4,568,149 in view of Nomoto et al. (JP 3-54523).

Sugata et al disclose (see figs. 2-5 and col. 6, lines 44-68) a liquid crystal display device comprising a first substrate 7 on a main surface thereof, a black mask 12 and color filters 14, each arranged in an aperture of the black mask, being formed; a liquid crystal layer 11; a second substrate S disposed opposite to the first substrate across the liquid crystal layer and stuck to the first substrate by a sealing material 10 applied to the peripheries of a main surface of the first substrate facing the liquid crystal layer and of a main surface of the second substrate facing the liquid crystal; a stacked structure formed on the main surface of the second substrate by stacking in order first signal lines 3, an insulating film 5 covering the first signal lines, and second signal lines 1 each overlappingly intersecting the first signal lines over the insulating film therebetween; first spacers and second spacers 6a-6c both formed on the main surfaces of the first substrate could be pressed against the black mask by an external force or second spacers contact (See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963): A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.) and each of the first spacers directly contacts with the stacked structure formed on the second substrate

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(See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963)).

Nomoto et al disclose in figs. 1-3 a liquid crystal display device comprising first and second substrate and first and second spacers 5/7/3, wherein in the absence of the external force, each of the second spacers 3 is spaced from the structure formed on the second substrate 2 to accommodate (See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963)) the liquid crystal therebetween.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teachings of Nomoto et al with Sugata's device since that would eliminate a gap defect as taught by Sugata.

As for claim 6, Nomoto et al disclose each of the second spacers contacts with the stacked structure formed on the second substrate while the first spacers be subjected to the external force.

As for claim 8, Sugata et al disclose first spacers contact with the stacked structure at overlappingly intersecting positions of the first signal lines and the second signal lines, and the second spacers correspond to positions of the first signal lines which are overlappingly intersecting with the second signal lines to accommodate the liquid crystal layer interposed therebetween.

As for claim 9, Sugata et al disclose (see col. 5, lines 1-5) a black mask and color filters covers by a protective film (not shown) and the first spacers and the second spacers are formed on top of the protective film.

As for claim 12, Sugata et al disclose a second substrate having a plurality of pixels arranged on the main surface thereof, and each of the pixels has a switching element controlled by one of the first signal lines and a pixel electrode receiving a signal from one of the second signal lines through the switching element.

9. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugata et al. in view of Nomoto et al. as applied to claim 1 above, and further in view of Tanaka et al. (JP 63-223728).

The combined references disclose the device structure as recited in the claim, but do not disclose a base pattern formed on area of a black mask.

Tanaka et al. disclose in figs. 1 and 2 a liquid crystal display device comprising first and second substrate and first and second spacers 27/25, wherein each of first spacers 25 is formed on top of a base pattern 22 formed on area of black mask, while the base pattern is not formed on area of the black mask where the second spacers 26 are formed.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teachings of Tanaka et al since that would prevent TFT from breakage due to deformation as taught by Tanaka et al.

As for claim 9, Tanaka et al disclose a black mask and color filters covers by a protective film and the first spacers and the second spacers are formed on top of the protective film.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tatemichi et al. (JP 3-287127) disclose a liquid crystal display device including a plurality of spacers to obtain a high-contrast display.

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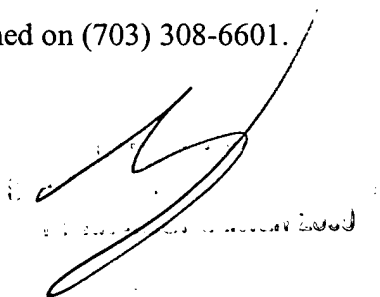
11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601.

ANS
January 13, 2003

A handwritten signature in black ink, appearing to be 'A. Sefer', is written over a faint, circular official stamp. The signature is fluid and cursive.